

Kenton C. Ward, CFM
Surveyor of Hamilton County
Phone (317) 776-8495
Fax (317) 776-9628

Suite 188
One Hamilton County Square
Noblesville, Indiana 46060-2230

October 5, 2018

To: Hamilton County Drainage Board

Re: Boone Creek Drain, Copper Run Arm

Attached is a petition filed by Pulte Homes of Indiana, LLC, along with a non-enforcement request, plans, calculations, quantity summary and assessment roll for the Copper Run (AKA Copperleaf) Arm, Boone Creek Drain to be located in Clay Township. I have reviewed the submittals and petition and have found each to be in proper form.

I have made a personal inspection of the land described in the petition. Upon doing so, I believe that the drain is practicable, will improve the public health, benefit a public highway, and be of public utility and that the costs, damages and expenses of the proposed drain will probably be less than the benefits accruing to the owners of land likely to be benefited. The drain will consist of the following:

12" RCP	655 ft.	24" RCP	569 ft.
15" RCP	715 ft.	30" RCP	222 ft.
15" HDPE	8 ft.	36" RCP	483 ft.
18" RCP	151 ft.	42" RCP	165 ft.
21" RCP	576 ft.	6" SSD	3,120 ft.
		Open Ditch	15 ft.

The total length of the drain will be 6,679 feet.

The retention ponds (Lake #1 and Lake #2) located in Common Area A are not to be considered part of the regulated drain. Pond maintenance assumed by the Drainage Board shall only include the inlets and outlets as part of the regulated drain. The maintenance of the retention ponds (lakes) such as sediment removal and erosion control along the banks, mowing and aquatic vegetation maintenance and control will be the responsibility of the Homeowners Association. The Board will retain jurisdiction for ensuring the storage volume for which the pond was designed will be retained. Thereby, allowing no fill or easement encroachments.

The subsurface drains (SSD) to be part of the regulated drain are those main lines located in rear yards and common areas. The SSD's in the street will not be part of the regulated drain due to street trees and the Hamilton County Drainage Board discussion on July 9, 2018, (see Hamilton County Drainage Board Minute Book 18, Pages 204 to 206). The street SSD will be the maintenance responsibility of the City of Carmel. Only the main SSD lines which are located within the easement are to be maintained as regulated drain. Laterals for individual lots will not be considered part of the regulated drain. The portion of the SSD which will be regulated are as follows:

Rear Yard SSDs:

Rear yard lots 1 and 2 from Str. 651 running north to riser
Rear yard lots 3 and 4 from Str. 608 running south east to riser
Rear yard lots 5 and 6 from Str. 644 running west to riser
Rear yard lots 6 and 7 from Str. 644 running east to riser
Rear yard lots 8 and 9 from Str. 638 running south to riser
Rear yard lots 10 and 11 from Str. 638 running north to riser
Rear yard lot 11 from Str. 613 running south to riser
Rear yard lots 17 and 18 from Str. 644 running south to riser
Rear yard lots 19 to 20 from Str. 647 running south to riser
Common Area C from Str. 647 running south to riser
Rear yard lots 21 and 22 from Str. 647 running north to riser
Common Area C from Str. 647 running north to riser
Rear yard lots 23 to 25 from Str. 634 running south to riser
Rear yard lot 26 from Str. 634 running north to riser
Rear yard lots 26 and 27 from Str. 616 running south to riser
Rear yard lot 28 from Str. 616 running north to riser
Common Area C from Str. 616 running south to riser
Common Area C from Str. 616 running south to riser
Common Area A from Str. 621 to Str. 622
Common Area A from Str. 622 running north west to riser

I have reviewed the plans and believe the drain will benefit each lot equally. Therefore, I recommend each lot be assessed equally. I also believe that no damages will result to landowners by the construction of this drain. I recommend a maintenance assessment of \$65.00 per platted lot, \$10.00 per acre for common areas, with a \$65.00 minimum, and \$10.00 per acre for roadways. With this assessment the total annual assessment for this drain will be \$2,259.00. I further recommend that the maintenance assessment collections be set to eight (8) times the annual collections as allowed in IC 36-9-27-43.

In accordance with IC 36-7-4-709, the petitioner did not submit surety for the proposed drain prior to construction commencing. If the petitioner/developer wants to submit final secondary plat for recording prior to the final inspection and approved as-built drawings, a bond will be required at that time.

I believe this proposed drain meets the requirements for Urban Drain Classification as set out in IC 36-9-27-67 to 69. Therefore, this drain shall be designated as an Urban Drain.

The off-site easement for this project will cross parcel number 019-10350-01 in Boone County, owned by Austin Oaks Homeowner's Association. An easement agreement is recorded as instrument number 2018009257 in the office of the Boone County Recorder.

The portion of drain within Boone County will consist of approximately 484 feet of 24" RCP and 15 feet of open ditch. The 24" RCP will begin approximately 28 feet northeast of Str. 604 and terminate at Str. 601. The open ditch shall be that section between Str. 601 and the south property line of Austin Oaks Section 10 Meadows Block "B".

Because the area of affected land in Hamilton County exceeds 80% of the total area of land affected by the proposed drain, also, because more than 90% of the length of the drain lies within Hamilton County, I have sent the Boone County Drainage Board a request for waiver of a Joint Drainage Board for this drain as per IC 36-9-27-14 (c).

I recommend that upon approval of the above proposed drain that the Board also approve the attached non-enforcement request. The request will be for the reduction of the regulated drain easement to those easement widths as shown on the secondary plat for Copper Run as recorded in the office of the Hamilton County Recorder.

I recommend the Board set a hearing for this proposed drain for November 26, 2018.



Kenton C. Ward, CFM
Hamilton County Surveyor

KCW/pll

STATE OF INDIANA)
)
COUNTY OF HAMILTON)

FILED

TO: HAMILTON COUNTY DRAINAGE BOARD
 % Hamilton County Surveyor
 One Hamilton County Square, Suite 188
 Noblesville, IN. 46060-2230

JUL 30 2018

OFFICE OF HAMILTON COUNTY SURVEYOR

In the matter of Copperleaf Subdivision, Section
Drain Petition.

Petitioner is the owner of all lots in the land affected by the proposed new regulated drain. The drainage will affect various lots in Copperleaf, a subdivision in Hamilton County, Indiana. The general route of such drainage shall be in existing easements and along public roads as shown in the plans on file in the Surveyor's Office.

Petitioner believes that the cost, damages and expenses of the proposed improvement will be less than the benefits which will result to the owners of the land likely to be benefited thereby. Petitioner believes the proposed improvements will:

- (a) improve public health
- (b) benefit a public street
- (c) be of public utility

Petitioner agrees to pay the cost of construction of the drainage system and requests periodic maintenance assessments by the Board thereafter.

The Petitioner also agrees to the following:

1. To provide the Drainage Board a Performance Bond or Non-Revocable Letter of Credit for the portion of the drainage system which will be made a regulated drain. The bond will be in the amount of 120% of the Engineer's estimate. The bond will be in effect until construction of 100% of the system is completed and so certified by the Engineer.
2. The Petitioner shall retain an Engineer throughout the construction phase. At completion of the project the Petitioner's Engineer shall certify that the drainage system which is to be maintained as a regulated drain has been constructed as per construction plans.
3. The Petitioner agrees to request in writing to the County Surveyor any changes from the approved plan and must receive written authorization from the County Surveyor prior to implementation of the change. All changes shall be documented and given to the Surveyor to be placed in the Drain file.
4. The Petitioner shall instruct his Engineer to provide a reproducible print on a 24" x 36" Mylar of the final design of the Drainage System. This shall be submitted to the County Surveyor prior to the release of the Performance Bond.
5. The Petitioner shall comply with the Erosion Control Plan as specified on the construction plans. Failure to comply with the Erosion Control Plan shall be determined by the Board as being an obstruction to the drainage system. The County Surveyor shall immediately install or repair the needed measures at Petitioner's cost as per IC 36-9-27-46.

Adobe PDF Fillable Form

The Petitioner further requests that the Drain be classified as an Urban Drain as per IC 36-9-27-69(d).

RECORDED OWNER(S) OF LAND INVOLVED



Signed

Jeremy Lollar, Pulte Homes

Printed Name

7/19/18

Date

Signed

Printed Name

Date

Signed

Printed Name

Date

Signed

Printed Name

Date

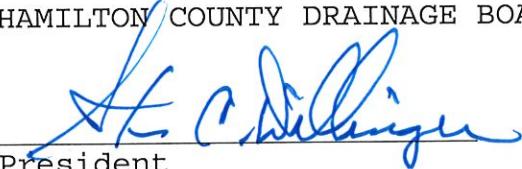
Adobe PDF Fillable Form

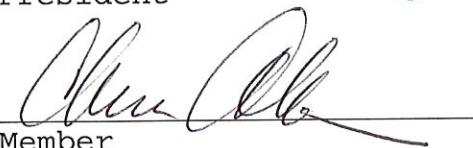
FINDINGS AND ORDER
CONCERNING THE MAINTENANCE OF THE
Boone Creek Drain, Copper Run Arm

On this **26th day of November, 2018**, the Hamilton County Drainage Board has held a hearing on the Maintenance Report and Schedule of Assessments of the **Boone Creek Drain, Copper Run Arm**.

Evidence has been heard. Objections were presented and considered. The Board then adopted the original/amended Schedule of Assessments. The Board now finds that the annual maintenance assessment will be less than the benefits to the landowners and issues this order declaring that this Maintenance Fund be established.

HAMILTON COUNTY DRAINAGE BOARD


President


Member


Member

Attest: 
Executive Secretary

FILED

JUL 30 2018

Pulte Homes

Project: Copperlead

HWC Project No. 2017-232

Date: 07/27/18


HWC
 ENGINEERING

PARCEL OF HAMILTON COUNTY SURVEYOR

PERFORMANCE BOND - ENGINEERS ESTIMATE					
	ITEM NAME:	UNIT	QUANTITY	UNIT COST	AMOUNT
STORM SEWER	12" RCP	LF	655	\$ 30.00	\$ 19,650.00
	15" RCP	LF	715	\$ 35.00	\$ 25,025.00
	18" RCP	LF	151	\$ 40.00	\$ 6,040.00
	21" RCP	LF	576	\$ 45.00	\$ 25,920.00
	24" RCP	LF	569	\$ 50.00	\$ 28,450.00
	30" RCP	LF	222	\$ 60.00	\$ 13,320.00
	36" RCP	LF	483	\$ 65.00	\$ 31,395.00
	42" RCP	LF	165	\$ 75.00	\$ 12,375.00
	12" END SECTION	EA	1	\$ 950.00	\$ 950.00
	18" END SECTION	EA	1	\$ 1,150.00	\$ 1,150.00
	21" END SECTION	EA	2	\$ 1,250.00	\$ 2,500.00
	24" END SECTION	EA	1	\$ 1,350.00	\$ 1,350.00
	30" END SECTION	EA	2	\$ 1,750.00	\$ 3,500.00
	36" END SECTION	EA	1	\$ 2,050.00	\$ 2,050.00
	42" END SECTION	EA	1	\$ 2,350.00	\$ 2,350.00
	12" TRASH GUARD	EA	1	\$ 600.00	\$ 600.00
	18" TRASH GUARD	EA	1	\$ 650.00	\$ 650.00
	21" TRASH GUARD	EA	2	\$ 700.00	\$ 1,400.00
	24" TRASH GUARD	EA	1	\$ 750.00	\$ 750.00
	30" TRASH GUARD	EA	2	\$ 800.00	\$ 1,600.00
	36" TRASH GUARD	EA	1	\$ 850.00	\$ 850.00
	42" TRASH GUARD	EA	1	\$ 1,000.00	\$ 1,000.00
	MANHOLE, STANDARD	EA	7	\$ 3,000.00	\$ 21,000.00
	MANHOLE, LARGE	EA	11	\$ 4,000.00	\$ 44,000.00
	STANDARD INLET	EA	9	\$ 2,000.00	\$ 18,000.00
	DOUBLE INLET	EA	8	\$ 4,000.00	\$ 32,000.00
	CURB SSD	LF	4379	\$ 10.00	\$ 43,790.00
	SWALE SSD	LF	3009	\$ 10.00	\$ 30,090.00
	SSD LATERALS	EA	28	\$ 100.00	\$ 2,800.00
	GRANULAR BACKFILL	TON	470	\$ 20.00	\$ 9,400.00
STORM SEWER SUBTOTAL: \$ 383,955.00					
STORM SEWER PERFORMANCE BOND (120%): \$ 460,746.00					
MONUMENTATION	LOT CORNERS	EA	110	\$ 35.00	\$ 3,850.00
	CENTERLINE	EA	12	\$ 200.00	\$ 2,400.00
	CONCRETE 4X4 PROPERTY CORNERS	EA	4	\$ 500.00	\$ 2,000.00
MONUMENTATION SUBTOTAL: \$ 8,250.00					
MONUMENTATION PERFORMANCE BOND (120%): \$ 9,900.00					

This Engineer's Estimate is an opinion of probable construction cost made on the basis of Engineer's experience and represent Engineer's judgement as a qualified professional generally familiar with the industry. However, since Engineer has no control over the cost of materials, equipment, labor or market conditions, Engineer cannot guarantee that actual construction cost will not vary from this Engineer's Estimate.

Brandon T. Burke, P.E.

HWC Engineering



BEFORE THE HAMILTON COUNTY DRAINAGE BOARD
IN THE MATTER OF

Boone Creek Drain, Copper Run Arm

NOTICE

To Whom It May Concern and: _____

Notice is hereby given of the hearing of the Hamilton County
Drainage Board on the **Boone Creek Drain, Copper Run Arm** on **November
26, 2018 at 9:00 A.M.** in Commissioners Court, Hamilton County
Judicial Center, One Hamilton County Square, Noblesville, Indiana,
and which construction and maintenance reports of the Surveyor and
the Schedule of Assessments made by the Drainage Board have been
filed and are available for public inspection in the office of the
Hamilton County Surveyor.

Hamilton County Drainage Board

Attest: Lynette Mosbaugh

ONE TIME ONLY

BEFORE THE HAMILTON COUNTY DRAINAGE BOARD
IN THE MATTER OF THE

Boone Creek Drain, Copper Run Arm

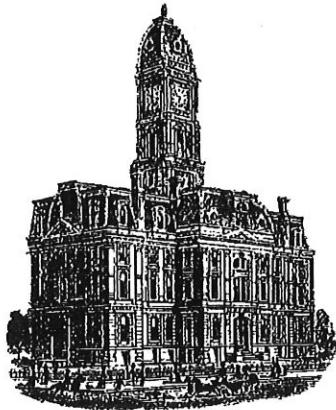
NOTICE

Notice is hereby given pursuant to Section 405 of the 1965 Indiana Drainage Code that this Board, prior to final adjournment on **November 26, 2018** has issued an order adopting the Schedule of Assessments, filed the same and made public announcement thereof at the hearing and ordered publication. If judicial review of the findings and order of the Board is not requested pursuant to Article Eight of this code within twenty (20) days from the date of this publication, the order shall be conclusive.

Hamilton County Drainage Board

Attest: Lynette Mosbaugh

ONE TIME ONLY



Kenton C. Ward, CFM
Surveyor of Hamilton County
Phone (317) 776-8495
Fax (317) 776-9628

Suite 188
One Hamilton County Square
Noblesville, Indiana 46060-2230

To: Hamilton County Drainage Board

September 30, 2020

Re: Boone Creek Drain: Copper Run Arm

Attached are as-built, certificate of completion & compliance, and other information for Copper Run. An inspection of the drainage facilities for this section has been made and the facilities were found to be complete and acceptable.

During construction, changes were made to the drain, which will alter the plans submitted with my report for this drain-dated October 5, 2018. The report was approved by the Board at the hearing held November 26, 2018. (See Drainage Board Minutes Book 18, Pages 310-311) The changes are as follows: the 12" RCP was shortened from 652 feet to 655 feet. The 15" RCP was shortened was shortened from 715 to 713 feet. The 15" HDPE was changed to 8 feet of 12" SSD. The 18" RCP was lengthened from 151 feet to 153 feet. The 21" RCP was lengthened from 576 feet to 591 feet. The 24" RCP was shortened from 569 feet to 565 feet. The 30" RCP was shortened from 222 feet to 217 feet. The 36" RCP was lengthened from 483 feet to 487 feet. The 42" RCP was lengthened from 165 feet to 166 feet. The 6" SSD was shortened from 165 feet to 166 feet. The length of the drain due to the changes described above is now **6,549 feet**.

The non-enforcement was approved by the Board at its meeting on November 26, 2018 and recorded under instrument #2019004669. Sureties not posted by the developer for this project in accordance with IC 36-7-4-709.

I recommend the Board approve the drain's construction as complete and acceptable.

Sincerely,


Kenton C. Ward, CFM
Hamilton County Surveyor

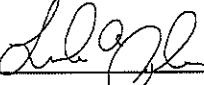
CERTIFICATE OF COMPLETION AND COMPLIANCE

To: Hamilton County Surveyor

Re: Copper Run (west of 131st & West Road, Carmel)

I hereby certify that:

1. I am a Registered Land Surveyor or Engineer in the State of Indiana.
2. I am familiar with the plans and specifications for the above referenced subdivision.
3. I have personally observed and supervised the completion of the drainage facilities for the above referenced subdivision.
4. The drainage facilities within the above referenced subdivision to the best of my knowledge, information and belief have been installed and completed in conformity with all plans and specifications.
5. The drainage facilities within the above referenced subdivision to the best of my knowledge, information and belief have been correctly represented on the Record Drawings, Digital Record Drawings and the Structure Data Spreadsheet.

Signature:  Date: 12/17/2020

Type or Print Name: Luke A. Jahn

Business Address: 135 N. Pennsylvania Street

Suite #2800

Telephone Number: 317-981-1269

SEAL



INDIANA REGISTRATION NUMBER

PS #20900171

REVISIONS

DATE	DESCRIPTION	BY
07/02/18	REVISED PER TAC COMMENTS	DC
08/02/18	REVISED PER TAC COMMENTS	DC
09/12/18	REVISED SUBMISSION NAME & STREET NAME	DC
12/15/18	RECORD DRAWING	SD
01/28/19	REVISED ENTRY SIGN FOOTPRINT	KM
02/27/19	ADDED MOUNDS TO COMMON AREA "A"	KS

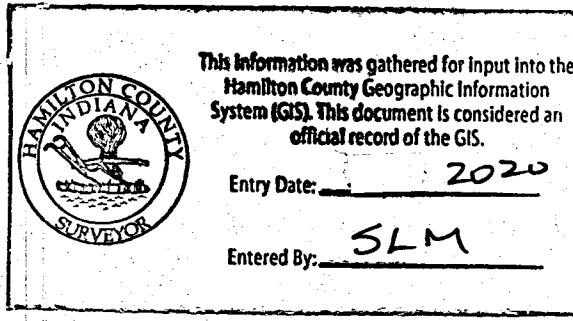
HWC
ENGINEERINGINDIANAPOLIS - TERRE HAUTE
LAFAYETTE - MUNCIE - NEW ALBANY
www.hweengineering.comCOPPER RUN
CARMEL, INDIANA
DEVELOPMENT PLAN

Plot Date: Apr 14, 2020 Plot Time: 12:29pm File Name: W:\Putt Homes\2017-232-A Putt - Copperon\Design\CAD\17232-A Development Plan - As-Built.dwg, Layout: C1.1 By: sdonaldson

OVERALL GENERAL PROJECT NOTES

1. ALL GAS, POWER, OR TELEPHONE LINES, WHETHER ABOVE OR BELOW GROUND, HAVE BEEN SHOWN ON THE DRAWINGS. ANY UNDERGROUND INFORMATION SHOWN IS FOR THE CONTRACTOR'S BENEFIT. THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR LOCATING AND PROTECTING UTILITIES IN THE AREA WHETHER SHOWN OR NOT, AND MUST REALIZE THAT THE ACTUAL LOCATION OF THE UTILITIES MAY BE DIFFERENT FROM THAT SHOWN ON THE DRAWINGS. ALL EXISTING UTILITIES ENCOUNTERED DURING THE CONSTRUCTION PHASE ARE THE PRIVATE PROPERTY OF THE CITY, WHICH THE CONTRACTORS RESPONSIBILITY TO MAINTAIN IN SERVICE. ANY UTILITY WHICH CAN BE REMOVED DURING CONSTRUCTION WITHOUT UNDUE INTERRUPTION TO SERVICE MAY BE REMOVED AND RELOCATED BY THE CONTRACTOR. THE PROPOSED LOCATION OF THE INSTALLATION OF THE WORK, BEFORE WORKING WITH OR AROUND UTILITIES, THE APPLICABLE UTILITY COMPANY SHALL BE NOTIFIED BY THE CONTRACTOR.
2. SAFETY PROVISIONS FOR THE WORK SHALL BE IN FULL COMPLIANCE WITH ALL APPLICABLE STATE AND LOCAL CODES OF INDIANA, AND ANY OTHER LOCAL STATE OR FEDERAL AGENCY HAVING JURISDICTION. IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING SAFETY OF ALL PERSONNEL. THE CONTRACTOR SHALL NOT ALLOW ANYONE TO WORK ON THE SITE AT MINIMUM, PROVIDE TRAFFIC CONTROL AS REQUIRED TO PROTECT THE GENERAL PUBLIC, THE CONTRACTOR'S WORK FORCES AND THE WORK. TRAFFIC CONTROL SHALL COMPLY WITH THE REQUIREMENTS OF THE INDIVIDUAL STATE AND THE MANUAL OF UNIFORM TRAFFIC CONTROL STANDARDS FOR STREETS AND HIGHWAYS, AND THE INDIANAPOLIS DEPARTMENT OF TRANSPORTATION STANDARDS SPECIFICATIONS, SPECIAL PROVISIONS, STANDARD DETAILING AND GENERAL INSTRUCTIONS TO FIELD EMPLOYEES. THE CONTRACTOR SHALL NOT ALLOW ANYONE TO WORK ON THE SITE DURING NORMAL WORKING HOURS, THE OPTION OF THE OWNER AND/OR ENGINEER TO CONDUCT CONSTRUCTION REVIEW OF THE CONTRACTOR'S PERFORMANCE IS NOT INTENDED TO INCLUDE REVIEW OF THE ADEQUACY OF THE CONTRACTOR'S SAFETY PROGRAM. ON OWNERS REQUEST, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND MAINTAINING ALL BARRICADES, FENCES, WARNING SIGNS, FLASHING LIGHTS, TEMPORARY WALKWAYS, AND TRAFFIC CONTROL DURING CONSTRUCTION. CONTRACTOR TO COORDINATE WITH OWNERS AND ENGINEERS FOR METRIC SAFETY REQUIREMENTS AND AGENCY REQUIREMENTS FOR TRAFFIC CONTROL AND SAFETY PRECAUTIONS. THERE WILL BE NO SEPARATE OR ADDITIONAL PAYMENT FOR THIS WORK.

3. WHERE PROPERTY MARKERS, SECTION CORNERS, SURVEY MARKS OR BENCHMARKS, SUCH AS STONES, PIPES, OR OTHER SUCH MONUMENTS ARE ENCOUNTERED AND CONFLICT WITH THE WORK, THE ENGINEER SHALL BE NOTIFIED BEFORE THEY ARE DISTURBED. THE MARKERS SHALL BE PROTECTED BY THE OWNER, ENGINEER, OR AUTHORIZED SURVEYOR OR AGENT HAS NOTIFIED OR REFERRED THEIR LOCATIONS.
4. ALL MATERIALS DENOTED "SAVAGED" SHALL BE STORED AND PROTECTED AT THE SITE FOR THE OWNER TO COLLECT OR FOR THE CONTRACTOR TO RE-USE AS INDICATED.
5. THERE SHALL BE NO CHANGES WITHOUT WRITTEN APPROVAL OF ENGINEER.
6. ALL GRADES AT BOUNDARY SHALL MEET EXISTING GRADES.
7. CONTRACTOR SHALL MINIMIZE DAMAGE TO EXISTING TREES.



MINIMUM FLOOD PROTECTION GRADE (MFG) AND MINIMUM LOWEST ADJACENT GRADE (MLAG) DEFINITIONS FROM CITY OF CARMEL STORMWATER TECHNICAL STANDARDS MANUAL SECTION 104.02:
All buildings shall have a minimum flood protection grade shown on the secondary plot. Minimum Flood Protection Grade of all structures fronting a pond or open ditch shall be no less than 2 feet above any adjacent 100-year local or regional flood elevations, whichever is greater, for all windows, doors, pipe entrances, window wells, any other structure member where floodwater can enter directly. The Minimum Flood Protection Grade shall also be a minimum of 12 inches above the adjacent surface. For all structures located in the Special Flood Hazard Area (SFHA) as shown on the FEMA maps, the lowest floor elevations of all residential, commercial, or industrial buildings shall be such that Lowest Floor elevation, including basement, shall be at the flood protection grade and therefore have 2 feet of freeboard above the 100-year flood elevation.

The Lowest Adjacent Grade for residential, commercial, or industrial buildings outside a FEMA or IDNR designated floodplain shall have two feet of freeboard above the flooding source. Minimum Flood Protection Grade of all structures fronting a pond or open ditch shall also be a minimum of one (1) foot above the local flood source or local flood route. Lowest Adjacent Grade is the elevation of the lowest grade adjacent to a structure, where the soil meets the foundation around the outside of the structure (including structural members such as basement walkout, patios, decks, porches, support posts or piers, and rim of the window well).

For areas outside a FEMA or IDNR designated floodplain, the Lowest Adjacent Grade (including walkout basement floor elevation) for all residential, commercial, or industrial buildings adjacent to ponds shall be set a minimum of 2 feet above the 100-year pond elevation or 2 feet above the emergency overflow weir elevation, whichever is higher. In addition to the Lowest Adjacent Grade requirements, any basement floor shall be at least a foot above the permanent water level (normal pool elevation).

BENCHMARK INFORMATION:

NOTE: ELEVATION INFORMATION SHOWN HEREON IS REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) BASED UPON GPS OBSERVATIONS PROCESSED BY THE NATIONAL GEODETIC SERVICE (NGS) UTILIZING AN ON-LINE POSITIONING USER SERVICE (OPUS) SOLUTION FROM OBSERVATIONS ON CONTROL POINT #100 (SEE BELOW).

CONTROL POINT #100 (PRIMARY BENCHMARK) - 5/8-INCH REBAR WITH RED PLASTIC CAP STAMPED "HWC RANDOM POINT" SET IN THE FELD SOUTH OF THE MAIN HOUSE, APPROXIMATELY 75 FEET WEST OF THE WEST-MOST TREE LINE ALONG THE EAST SIDE OF THE SUBJECT TRACT, AND APPROXIMATELY 400 FEET SOUTH OF THE RAIL FENCE ALONG THE SOUTH LINE OF THE GRASS FIELD. ELEVATION: 892.72 (NAVD 88)

CONTROL POINT #101- 5/8-INCH REBAR WITH RED PLASTIC CAP STAMPED "HWC RANDOM POINT" SET NORTH OF W. 131ST STREET AND 200 FEET WEST OF THE ASPHALT DRIVEWAY FOR THE SUBJECT TRACT, APPROXIMATELY 15 FEET FROM THE NORTH EDGE OF PAVEMENT OF W. 131ST STREET AND 31.5 FEET SOUTHEAST OF THE STOP SIGN AT THE INTERSECTION. ELEVATION: 896.50 (NAVD 88)

CONTROL POINT #102- MAG NAIL WITH WASHER STAMPED "HWC RANDOM POINT" SET CLOSE TO THE ROAD SURFACE AT THE SOUTH END OF THE MEDIAN AT THE INTERSECTION OF HANSEN LANE AND W. 131ST STREET, APPROXIMATELY 4 FEET SOUTHEAST FROM THE BACK OF CURB OF THE MEDIAN AND 37.3 FEET SOUTHEAST OF THE STOP SIGN AT THE INTERSECTION. ELEVATION: 895.17 (NAVD 88)

HORIZONTAL INFORMATION:
STATE PLANE COORDINATES-EAST ZONE, NAD83

STORM SEWER FOR THIS
PROJECT WILL BE PUBLICSANITARY SEWER SERVICE
E-ONE GRINDER PUMP & LOW PRESSURE COMMON FORCEMAIN SERVICE:
LOTS 1-28SEE SHEET C1.2 FOR WET POND
BANK PLANTINGS, DETAIL & NOTES.

LEGEND:

25	LOT NUMBER
D.E.	DRAINAGE EASEMENT
D.U.E.	DRAINAGE & UTILITY EASEMENT
B.S.L.	BUILDING SETBACK LINE
R.S.L.	REAR SETBACK LINE
B.Y.E.	BUFFERYARD EASEMENT
C.A.	COMMON AREA
S.F.	SQUARE FOOT
A.C.	ACRE

CARMEL GENERAL NOTES:
1. UTILITY RELOCATIONS REQUIRED BY THE PROJECT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER. UTILITY LINE RELOCATIONS REQUESTED FOR RELOCATED UTILITIES THAT RESULT IN DAMAGE TO THE PROPERTY OF THE DEVELOPER SHALL BE THE RESPONSIBILITY OF THE DEVELOPER TO RESOLVE WITH THE UTILITY. EXISTING POLE LINES REQUIRED TO BE RELOCATED SHALL BE RELOCATED TO WITHIN ONE FOOT OF THE PROPOSED RIGHT-OF-WAY LINE.

2. NO EARTH DISTURBING ACTIVITY MAY COMMENCE WITHOUT AN APPROVED STORM WATER MANAGEMENT PERMIT.

3. DAMAGE TO THE EXISTING RIGHT-OF-WAY SHALL BE RESTORED/REPAIRED TO THE SATISFACTION OF THE CITY AT THE COMPLETION OF THE PROJECT. THE CONTRACTOR IS ENCOURAGED TO INSPECT THE RIGHT-OF-WAY WITH THE CITY PRIOR TO THE START OF CONSTRUCTION TO DOCUMENT THE EXISTING CONDITION OF THE RIGHT-OF-WAY.

GRAPHIC SCALE
0' 50' 100' 150'
(IN FEET)

LEGEND:

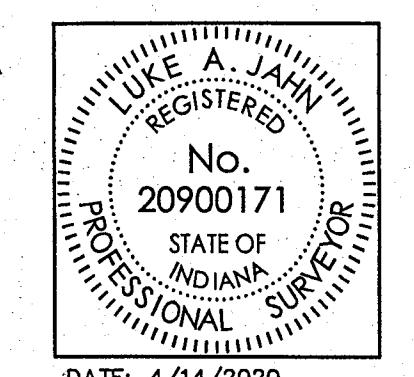
EXISTING	RIGHT-OF-WAY LINE
—	EASEMENT LINE
—	SETBACK LINE
—	CENTERLINE
—	SWALE / FLOWLINE
—	SUBSURFACE DRAIN
—	SANITARY SEWER
—	STORM SEWER
—	STORM CULVERT
—	WATER MAIN
—	(LPGS) LOW PRESSURE GRINDER PUMP SYSTEM
—	CONTOUR, MAJOR
—	CONTOUR, MINOR
—	FENCE
—	TREE LINE
—	SANITARY MANHOLE
—	STORM MANHOLE
—	STORM INLET
—	FIRE HYDRANT
N/A	FLOW ARROW

BC	BACK OF CURB	PC	POINT OF CURVATURE
CL	CENTERLINE	PT	POINT OF TANGENCY
FG	FINISHED GRADE	PVC	POLYVINYL CHLORIDE PIPE
FL	FLOW LINE	RCP	REINFORCED CONCRETE PIPE
HP	HIGH POINT	R/W	RIGHT-OF-WAY
LP	LOW POINT	TB	TOP OF BANK GRADE
NP	NORMAL POOL (ELEVATION)	FM	(LPGS) LOW PRESSURE GRINDER PUMP SYSTEM

—	EMERGENCY FLOOD ROUTE
MFG	MINIMUM FLOOD PROTECTION GRADE (SEE DEFINITION ON SHEET C1.1)
MLAG	MINIMUM LOWEST ADJACENT GRADE (SEE DEFINITION ON SHEET C1.1)
(A)	A.D.A. HANDICAP RAMP
(B)	2' ROLL CURB
(C)	20' SAFETY RAMPS @ 6:1 SLOPE
(D)	INDOT APPROVED SNOWPLOWABLE RAISED PAVEMENT MARKERS
(E)	POND WARNING SIGNS
(F)	TREE PROTECTION FENCING (ORANGE CONSTRUCTION FENCING)
(G)	CURB INLET SNOOT BMP
(H)	MECHANICAL SEPARATOR BMP
(I)	STREET LIGHT
(J)	6'x6" WOOD BARRIER POST
(K)	ARBOR (TRILLIS) AND BENCH
(L)	NATIVE GRASS POND BANK (SEE DETAIL 8' WIDE MINIMUM (SHEET C1.2))
(M)	*STORM WATER BMP NATURAL PRESERVATION AREA (SEE DETAIL (SHEET C1.2)) DO NOT MOW OR SPRAY SIGN
(N)	2' ROLL CURB (NO GUTTER)
(P)	BUBBLER LAKE #1 BUBBLER = 2.96 AC-FT CIRCULATED OVER 24 HOURS LAKE #2 BUBBLER = 1.57 AC-FT CIRCULATED OVER 24 HOURS

CERTIFICATION FOR "RECORD DRAWING"

CERTIFIED BY: LUKE A. JAHN
HWC ENGINEERING
135 N. PENNSYLVANIA STREET, SUITE 2800
INDIANAPOLIS, INDIANA 46204
(317) 347-3663 FAX (317) 347-3664



NOTE:
Record drawing certification only for storm sewer, sanitary sewer, sub-surface drainage, and grading.

DATE: 4/14/2020

DRAINAGE SUMMARY:

COPPER RUN IS A PROPOSED SINGLE FAMILY RESIDENTIAL DEVELOPMENT OF 28 NEW LOTS (& ONE EXISTING LOT) OVER 22.4 ACRES. THE STORMWATER SYSTEM WILL BE COLLECTED BY THE PROPOSED STORM SEWER SYSTEM. THE PROPOSED STORM SEWER SYSTEM WILL BE CONNECTED TO A DENSE NETWORK OF EXISTING STORM SEWER LINES. WATER QUALITY & QUANTITY WILL BE PROVIDED. LAKE #2 OUTLET SOUTH TO LAKE #1 IN THE SOUTHWEST CORNER OF THE SITE. LAKE #1 OUTLET TO BOONE CREEK (OFFSITE STORM ROUTE TO BOONE CREEK).

THEY IS A CONSIDERABLE AMOUNT OF OFFSITE DRAINAGE (43.84 ACRES IN TOTAL) THAT WILL AFFECT THE PROJECT SITE. PRIMARILY COMING FROM THE EXISTING RESIDENTIAL ESTATES EAST OF THE PROJECT SITE. THE ONSITE STORM SEWER AND SWALE SYSTEM WILL BE DESIGNED TO CAPTURE AND ROUTE THIS OFFSITE DRAINAGE DIRECTLY TO THE LAKE #2 OUTLET. THE 100-YEAR ELEVATION IS 892.70 FT. AND THE 20-YEAR ELEVATION IS 892.50 FT. AND ABOVE THE 100-YEAR ELEVATION THE 20-YEAR ELEVATION IS 892.40 FT. AND ABOVE THE 20-YEAR ELEVATION THE 10-YEAR ELEVATION IS 892.30 FT. AND ABOVE THE 10-YEAR ELEVATION THE 5-YEAR ELEVATION IS 892.20 FT. AND ABOVE THE 5-YEAR ELEVATION THE 1-YEAR ELEVATION IS 892.10 FT. AND ABOVE THE 1-YEAR ELEVATION THE 0.5-YEAR ELEVATION IS 892.05 FT. AND ABOVE THE 0.5-YEAR ELEVATION THE 0.25-YEAR ELEVATION IS 892.00 FT. AND ABOVE THE 0.25-YEAR ELEVATION THE 0.1-YEAR ELEVATION IS 891.95 FT. AND ABOVE THE 0.1-YEAR ELEVATION THE 0.05-YEAR ELEVATION IS 891.90 FT. AND ABOVE THE 0.05-YEAR ELEVATION THE 0.02-YEAR ELEVATION IS 891.85 FT. AND ABOVE THE 0.02-YEAR ELEVATION THE 0.01-YEAR ELEVATION IS 891.80 FT. AND ABOVE THE 0.01-YEAR ELEVATION THE 0.005-YEAR ELEVATION IS 891.75 FT. AND ABOVE THE 0.005-YEAR ELEVATION THE 0.002-YEAR ELEVATION IS 891.70 FT. AND ABOVE THE 0.002-YEAR ELEVATION THE 0.001-YEAR ELEVATION IS 891.65 FT. AND ABOVE THE 0.001-YEAR ELEVATION THE 0.0005-YEAR ELEVATION IS 891.60 FT. AND ABOVE THE 0.0005-YEAR ELEVATION THE 0.0002-YEAR ELEVATION IS 891.55 FT. AND ABOVE THE 0.0002-YEAR ELEVATION THE 0.0001-YEAR ELEVATION IS 891.50 FT. AND ABOVE THE 0.0001-YEAR ELEVATION THE 0.00005-YEAR ELEVATION IS 891.45 FT. AND ABOVE THE 0.00005-YEAR ELEVATION THE 0.00002-YEAR ELEVATION IS 891.40 FT. AND ABOVE THE 0.00002-YEAR ELEVATION THE 0.00001-YEAR ELEVATION IS 891.35 FT. AND ABOVE THE 0.00001-YEAR ELEVATION THE 0.000005-YEAR ELEVATION IS 891.30 FT. AND ABOVE THE 0.000005-YEAR ELEVATION THE 0.000002-YEAR ELEVATION IS 891.25 FT. AND ABOVE THE 0.000002-YEAR ELEVATION THE 0.000001-YEAR ELEVATION IS 891.20 FT. AND ABOVE THE 0.000001-YEAR ELEVATION THE 0.0000005-YEAR ELEVATION IS 891.15 FT. AND ABOVE THE 0.0000005-YEAR ELEVATION THE 0.0000002-YEAR ELEVATION IS 891.10 FT. AND ABOVE THE 0.0000002-YEAR ELEVATION THE 0.0000001-YEAR ELEVATION IS 891.05 FT. AND ABOVE THE 0.0000001-YEAR ELEVATION THE 0.00000005-YEAR ELEVATION IS 891.00 FT. AND ABOVE THE 0.00000005-YEAR ELEVATION THE 0.00000002-YEAR ELEVATION IS 890.

REVISIONS

DATE	DESCRIPTION	BY
07/02/18	REVISED PER TAC COMMENTS	DC
08/01/18	REVISED PER TAC COMMENTS	DC
09/12/18	REVISED SUBMISSION NAME & STREET NAME	DC
01/25/19	RECORD DRAWING	SD
01/28/19	REVISED ENTRY SIGN FOOTPRINT	KM
02/27/19	ADDED MOUNDS TO COMMON AREA "A"	KS



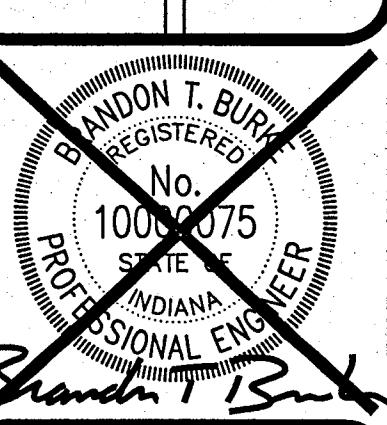
Call 811 or 800-382-5544 Before you Dig!

Pipe Table		
UPSTREAM TO DOWNSTREAM	PIPE LENGTH (FT)	PIPE DIA. (IN)
611-610	165	42"
612-611	22	36"
613-612	81	36"
614-613	125	36"
619-612	46	18"
620-619	32	18"
621-620	23	18"
622-621	120	15"
623-622	154	15"
625-621	107	15"
626-625	50	12"
628-614	20	15"
629-628	32	12"
651-650	54	12"

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www.hwengineering.com

COPPER RUN CARMEL, INDIANA

STORM SEWER PLAN AND PROFILE



DRAWN BY
DC
CHECKED BY
BB
DATE
MAY 18, 2018
SCALE
AS SHOWN
SHEET

C6.0

STORM SEWER PLAN AND PROFILE

© 2018

LEGEND:	
EXISTING	PROPOSED
RIGHT-OF-WAY LINE	
EASEMENT LINE	
CENTERLINE	
SWALE / FLOWLINE	
SUBSURFACE DRAIN	
SANITARY SEWER	S
STORM SEWER	ST
STORM CULVERT	ST
WATER MAIN	W
SANITARY MANHOLE	xxx
STORM MANHOLE	xxx
STORM INLET	xxx
STORM END SECTION	xxx
Fire Hydrant	
PROFILED PIPELINE	ST
EX - EXISTING	
INV - INVERT ELEVATION	
NH - MANHOLE	
RCP - REINFORCED CONCRETE PIPE	
TC - TOP OF CASTING GRADE	
LPGPS - LOW PRESSURE GRINDER PUMP SYSTEM	

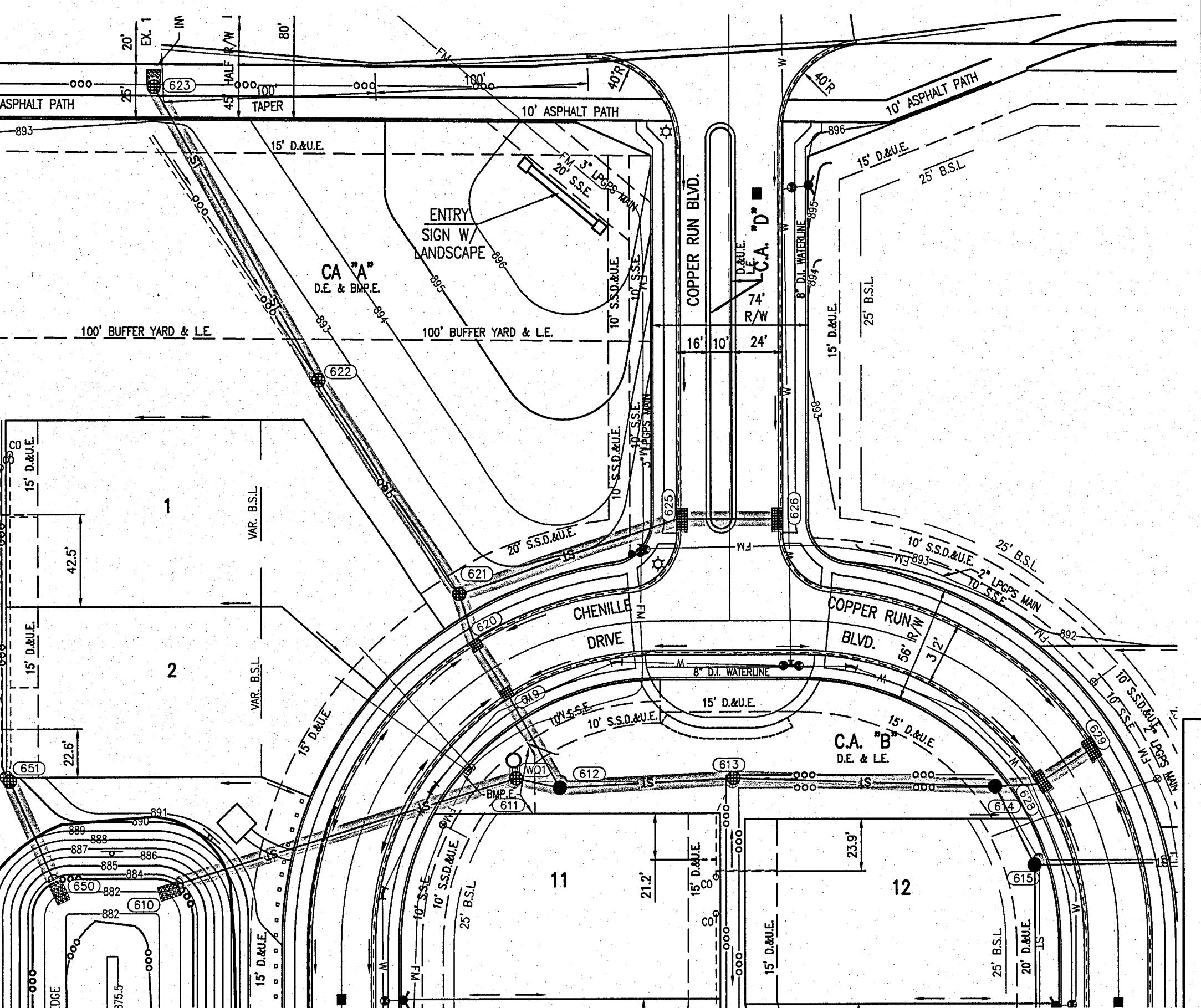
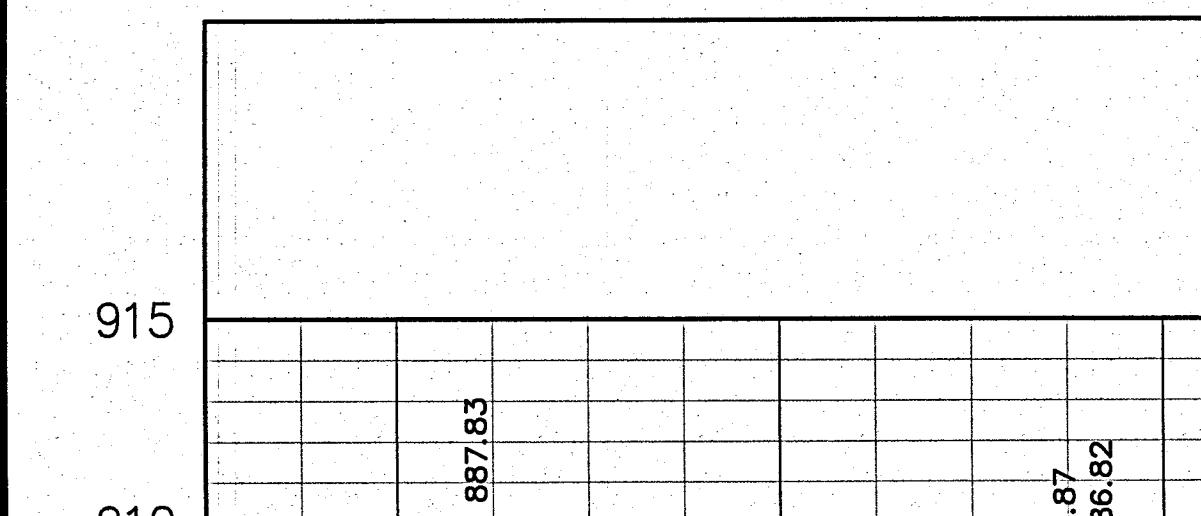
GENERAL NOTES:

- TEMPORARY TRAFFIC CONTROL DURING CONSTRUCTION TO CONFORM TO APPLICABLE LOCAL AND STATE STANDARDS.
- ALL CONSTRUCTION ACTIVITY ON THIS SITE TO BE PERFORMED IN COMPLIANCE WITH APPLICABLE O.S.H.A. STANDARDS FOR WORKER SAFETY.
- IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO FIELD VERIFY ALL UTILITY LOCATIONS BEFORE CONSTRUCTION BEGINS.
- IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO FIELD VERIFY ALL EXISTING ELEVATIONS BEFORE CONSTRUCTION BEGINS.
- THE STORM SEWER SYSTEM SHALL BE CONSTRUCTED PER DESIGN SPECIFIED AND AS APPROVED BY THE CITY OF CARMEL ON THE FINAL APPROVED CONSTRUCTION PLANS. DEVIATIONS FROM THE APPROVED DESIGN SHALL ONLY BE PERMITTED DUE TO SPECIAL CIRCUMSTANCES OR DIFFICULTY DURING CONSTRUCTION AND WILL REQUIRE PRIOR FIELD APPROVAL FROM A DESIGNATED REPRESENTATIVE OF THE CITY OF CARMEL IN ADDITION TO SUPPLEMENTAL APPROVAL BY THE DESIGN ENGINEER. AN EXPLANATION OF ANY SUCH DEVIATION SHALL BE INCLUDED AS A REQUIREMENT ON AS-BUILT/RECORD DRAWINGS SUBMITTED FOR RELEASE OF PERFORMANCE GUARANTEES. APPROVED DESIGN SLOPES IDENTIFIED AS GENERATING VELOCITIES OF 5.0 FPS OR LESS OR 10.0 FPS OR GREATER (MAX FLOW CAPACITY) SHALL REQUIRE AS-BUILT RECORDS OF THE TYPE OF CONCRETE PRIOR TO BACKFILLING THE PIPE. THE CONTRACTOR IS INSTRUCTED TO AS-BUILD EACH SECTION OF STORM PIPE AS IT IS BEING INSTALLED TO ENSURE COMPLIANCE WITH THE DESIGN PLANS AND AS APPROVED BY THE CITY OF CARMEL.
- NO EARTH DISTURBING ACTIVITY MAY COMMENCE WITHOUT AN APPROVED STORM WATER MANAGEMENT PERMIT.
- ALL STORMWATER DRAINAGE CASTINGS SHALL BE LABELED WITH ENVIRONMENTAL MESSAGING "DUMP NO WASTE".
- ALL CONCRETE PIPE JOINTS SHALL BE CONTINUOUS O-RING RUBBER GASKET CONFORMING TO ASTM C 443.
- 18" OF VERTICAL SEPARATION MUST BE MAINTAINED FOR ALL UTILITY CROSSINGS.
- FOR STORM SEWER BACKFILL SPECIFICATIONS, REFER TO STORM SEWER TRENCH DETAIL STANDARD DRAWING 10-28 ON SHEET C8.4.

STORM PROFILE

VERTICAL SCALE: 1" = 5'

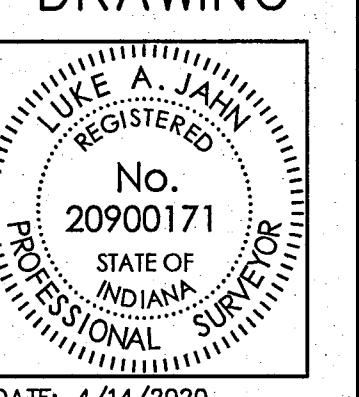
HORIZONTAL SCALE: 1" = 50'



STORM SEWER STRUCTURE DATA TABLE									
STR. #	TC	INV. IN (ELEV.)	INV. OUT (ELEV.)	PIPE IN DIA. (INCH)	PIPE OUT DIA. (INCH)	PIPE IN MATERIAL	PIPE OUT MATERIAL	STR. & CASTING TYPE	DETAIL REFERENCE
610	886.92	883.50 (E)		42"		RCP	RCP	END SECTION	SEE DETAIL SHEET C8.3
611	892.09	883.90 (W)	883.70 (W)	36"	42"	RCP	RCP	6' DIVERSION MANHOLE NEENAH R-1772	SEE DETAIL SHEET C8.2
612	891.45	883.95 (E) 885.65 (NW)	883.95 (W)	36" 18"	36"	RCP	RCP	6' DIA. MANHOLE NEENAH R-1772	SEE DETAIL SHEET C8.6
613	889.40	884.10 (E)	884.10 (W)	36"	36"	RCP	RCP	5' DIA. MANHOLE NEENAH R-4342	SEE DETAIL SHEET C8.6
614	890.69	884.35 (SE) 885.75 (E)	884.35 (W)	36" 15"	36"	RCP	RCP	6' DIA. MANHOLE NEENAH R-1772	SEE DETAIL SHEET C8.6
619	891.11	886.00 (NW)	885.90 (SE)	18"	18"	RCP	RCP	4' DIA. MANHOLE NEENAH R-3501-N	SEE DETAIL SHEET C8.6
620	891.11	886.30 (N)	886.20 (SE)	18"	18"	RCP	RCP	4' DIA. MANHOLE NEENAH R-3501-N	SEE DETAIL SHEET C8.6
621	890.40	886.60 (NW) 886.60 (E)	886.40 (S)	15" 15"	18"	RCP	RCP	4' DIA. MANHOLE NEENAH R-4342	SEE DETAIL SHEET C8.6
622	891.00	887.15 (NW)	887.05 (SE)	15"	15"	RCP	RCP	2'X2' BOX NEENAH R-4342	SEE DETAIL SHEET C8.3
623	892.10		888.00 (SE)		15"	RCP	RCP	2'X2' BOX NEENAH R-4342	SEE DETAIL SHEET C8.3
625	891.54	887.30 (E)	887.10 (W)	12"	15"	RCP	RCP	DOUBLE CURB INLET NEENAH R-3501-N	SEE DETAIL SHEET C8.3
626	891.54		887.50 (W)		12"	RCP	RCP	DOUBLE CURB INLET NEENAH R-3501-N	SEE DETAIL SHEET C8.3
628	890.20	886.05 (NE)	885.85 (W)	12"	15"	RCP	RCP	DOUBLE CURB INLET NEENAH R-3501-N	SEE DETAIL SHEET C8.3
629	890.20		886.20 (SW)		12"	RCP	RCP	DOUBLE CURB INLET NEENAH R-3501-N	SEE DETAIL SHEET C8.3
650	885.25	884.00 (NW)			12"	RCP	RCP	END SECTION	SEE DETAIL SHEET C8.3
651	889.50		885.00 (SE)		12"	RCP	RCP	2'X2' BOX NEENAH R-4342	SEE DETAIL SHEET C8.3

CERTIFICATION FOR "RECORD DRAWING"

CERTIFIED BY: LUKE A. JAHN
HWC ENGINEERING
135 N. PENNSYLVANIA STREET, SUITE 2800
INDIANAPOLIS, INDIANA 46204
(317) 347-3664



DATE: 4/14/2020

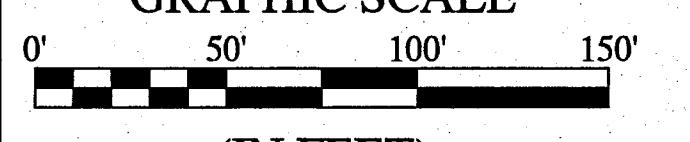
STATE OF INDIANA

REGISTERED PROFESSIONAL SURVEYOR

No. 20900171

ELEVATION: 886.56 (NAVD 88)

GRAPHIC SCALE (IN FEET)



BENCHMARK INFORMATION:

NOTE: ELEVATION INFORMATION SHOWN HEREON IS REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) BASED ON THE NATIONAL GEODASTIC SURVEY (NGS) UTILIZING AN ON-LINE POSITIONING SYSTEM. ELEVATIONS ARE NOT TO BE USED FOR NAVIGATION OR SURVEY PURPOSES.

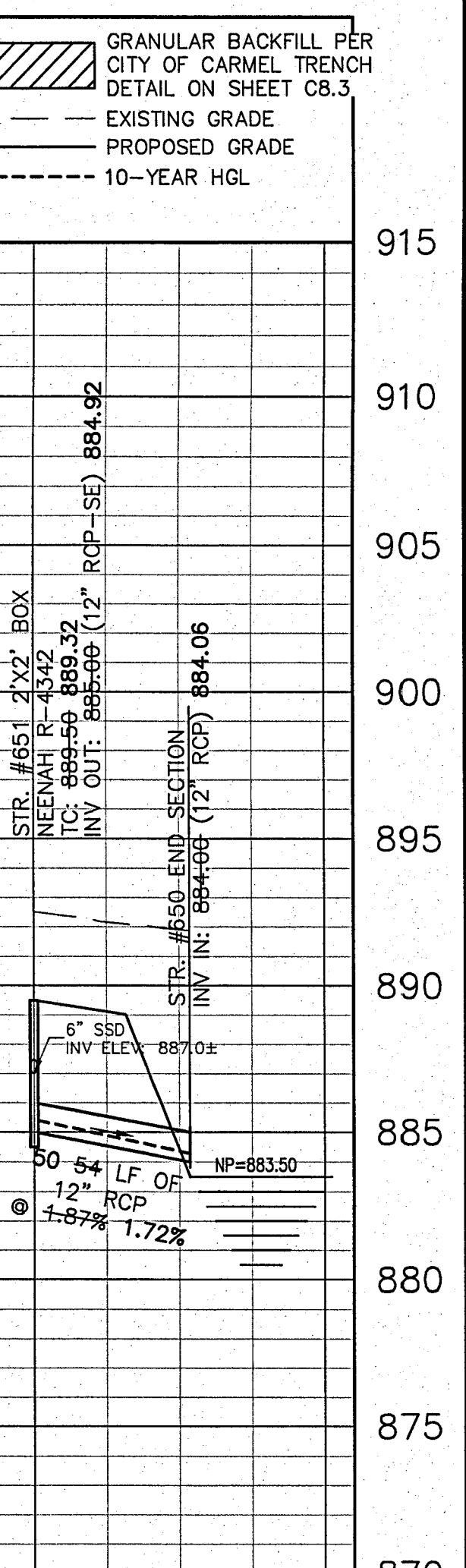
CONTROL POINT #100 - GRANULAR BACKFILL - 6" INCH REBAR WITH RED PLASTIC CAP STAMPED "HWC RANDOM PONT SET" IN THE SUBJECT TRACT, APPROXIMATELY 15 FEET NORTH OF THE NORTH EDGE OF PAVEMENT OF W. 131ST STREET AND 51.5 FEET SOUTH OF THE SOUTH END OF THE SUBJECT TRACT.

CONTROL POINT #102 - MAG NAIL WITH WASHER STAMPED "HWC RANDOM PONT SET" IN THE ROAD SURFACE AT THE SOUTH END OF THE MEDIAN IN THE SUBJECT TRACT, APPROXIMATELY 15 FEET FROM THE BACK OF CUPOLA TREES AND APPROXIMATELY 100 FEET SOUTHEAST OF THE STOP SIGN AT THE INTERSECTION.

ELEVATION: 885.17 (NAVD 88)

HOUSING AUTHORITY

STATE PLANE COORDINATES-EAST ZONE, NAD83



REVISIONS

DATE	DESCRIPTION	BY
07/02/18	REVISED PER TAC COMMENTS	DC
08/02/18	REVISED PER TAC COMMENTS	DC
09/12/18	REVISED SUBMISSION NAME & STREET NAME	DC
01/25/19	RECORD DRAWING	SD
01/28/19	REVISED ENTRY SIGN FOOTPRINT	KM
02/27/19	ADDED MOUNDS TO COMMON AREA "A"	KS

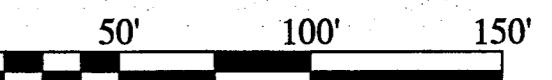


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GRAPHIC SCALE



(IN FEET)

HWC
ENGINEERING

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LAFAYETTE - MUNCIE - NEW ALBANY
www.hwcengineering.com

LEGEND:	EXISTING	PROPOSED
RIGHT-OF-WAY LINE	- - -	- - -
EASEMENT LINE	- - -	- - -
SETBACK LINE	- - -	- - -
CENTERLINE	- - -	- - -
SWALE / FLOWLINE	ooo	ooo
SURFACE DRAIN	ooo	ooo
SANITARY SEWER	ooo	ooo
STORM SEWER	ooo	ooo
WATER MAIN	ooo	ooo
SANITARY MANHOLE	● XXX	● XXX
STORM MANHOLE	● XXX	● XXX
STORM INLET	● XXX	● XXX
STORM END SECTION	● XXX	● XXX
FIRE HYDRANT	● XXX	● XXX
PROFILLED PIPELINE	—	—
EX - EXISTING	—	—
INV - INVERT ELEVATION	—	—
MH - MANHOLE	● XXX	● XXX
RCP - REINFORCED CONCRETE PIPE	—	—
TC - TOP OF CASTING GRADE	—	—
LPGPS - LOW PRESSURE GRINDER PUMP SYSTEM	—	—

GENERAL NOTES:

- TEMPORARY TRAFFIC CONTROL DURING CONSTRUCTION TO CONFORM TO APPLICABLE LOCAL AND STATE STANDARDS.
- ALL CONSTRUCTION ACTIVITY ON THIS SITE TO BE PERFORMED IN COMPLIANCE WITH APPLICABLE O.S.H.A. STANDARDS FOR WORKER SAFETY.
- IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO FIELD VERIFY ALL UTILITY LOCATIONS BEFORE CONSTRUCTION BEGINS.
- IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO FIELD VERIFY ALL EXISTING ELEVATIONS BEFORE CONSTRUCTION BEGINS.
- THE STORM SEWER SYSTEM SHALL BE CONSTRUCTED PER DESIGN SPECIFIED AND AS APPROVED BY THE CITY OF CARMEL ON THE FINAL APPROVED CONSTRUCTION PLANS. CONSTRUCTION ACTIVITY MAY NOT COMMENCE WITHOUT APPROVAL FROM THE CITY. LOCAL CIRCUMSTANCES OR DIFFICULTY DURING CONSTRUCTION AND WILL REQUIRE PRIOR FIELD APPROVAL FROM A DESIGNATED REPRESENTATIVE OF THE CITY OF CARMEL IN ADDITION TO SUPPLEMENTAL APPROVAL FROM THE DESIGN ENGINEER. AN EXPLANATION OF THE CONSTRUCTION ACTIVITY AND THE APPROVAL PROCESS IS PROVIDED IN THE AS-BUILT RECORD DRAWINGS SUBMITTED FOR RELEASE OF PERFORMANCE GUARANTEES. APPROVED DESIGN SLOPES IDENTIFIED AS GENERATING VELOCITIES OF 2.5 FPS OR LESS OR 10 FPS OR GREATER (AT FULL FLOW CAPACITY) SHALL REQUIRE AS-BUILT CERTIFICATION AT THE TIME OF CONSTRUCTION PRIOR TO BACKFILLING THE PIPE. THE CONTRACTOR IS INVESTIGATED AS WELL AS EXAMINED THE STORM DITCH AS IT IS BEING INSTALLED TO ENSURE COMPLIANCE WITH THE DESIGN PLANS AND AS APPROVED BY THE CITY OF CARMEL.
- NO EARTH DISTURBING ACTIVITY MAY COMMENCE WITHOUT AN APPROVED STORM WATER MANAGEMENT PERMIT.
- ALL STORMWATER DRAINAGE CASTINGS SHALL BE LABELED WITH ENVIRONMENTAL MESSAGING "DUMP NO WASTE".
- ALL CONCRETE PIPE JOINTS SHALL BE CONTINUOUS O-RING RUBBER GASKET CONFORMING TO ASTM C 443.
- 18" OF VERTICAL SEPARATION MUST BE MAINTAINED FOR ALL UTILITY CROSSINGS.
- FOR STORM SEWER BACKFILL SPECIFICATIONS, REFER TO STORM SEWER TRENCH DETAIL STANDARD DRAWING 10-28 ON SHEET C8.4

By: sdonaldson

C6.1

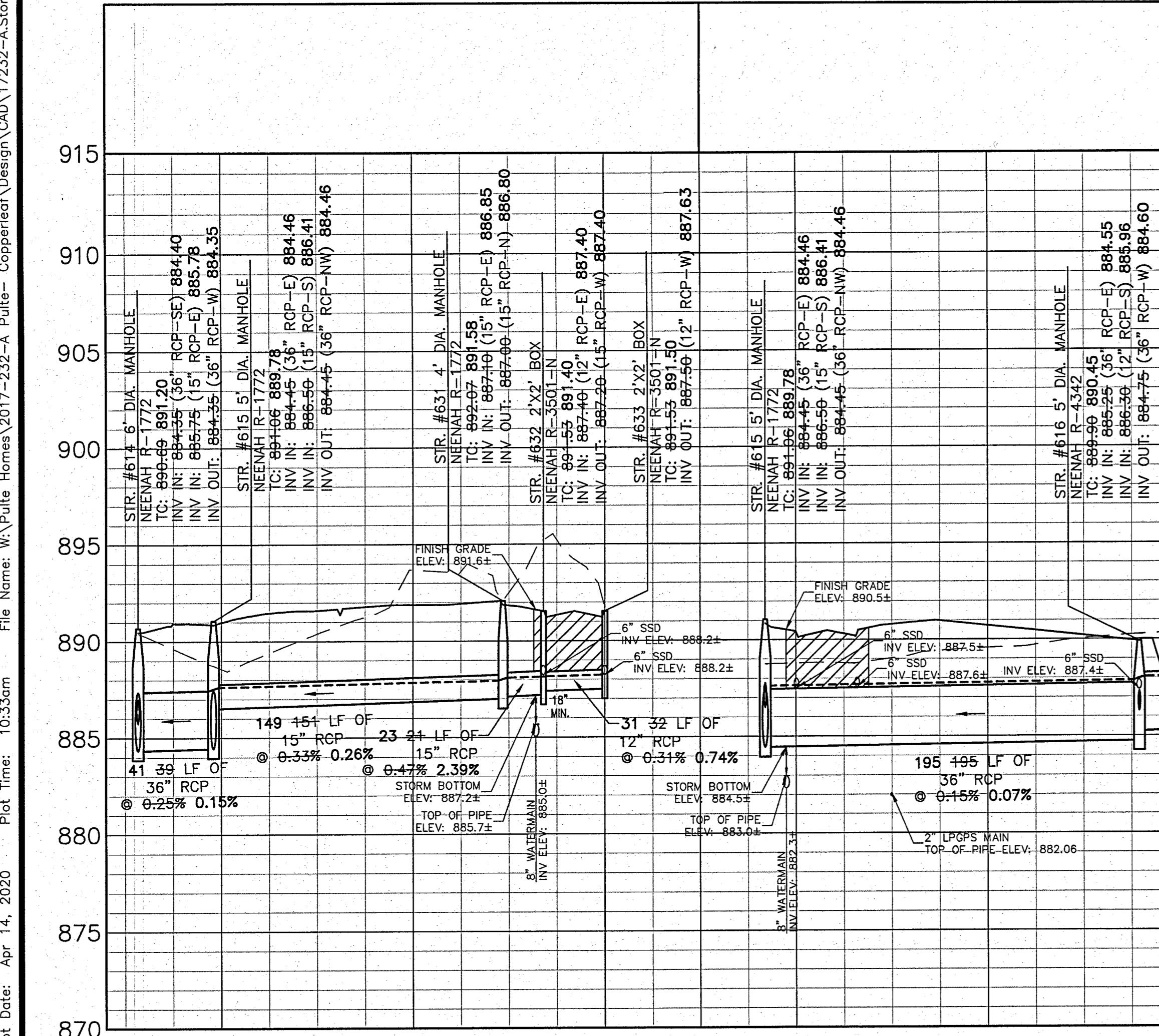
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File Name: W:\Pulte Homes\2017-232-A_Pulte-Copperleaf\Design\CAD\17232-A-Storm Plan - Ashbuilt.dwg, Layout: C6.1

STORM PROFILE

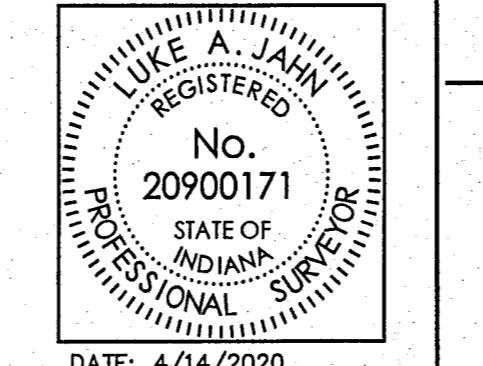
VERTICAL SCALE: 1" = 5'

HORIZONTAL SCALE: 1" = 50'

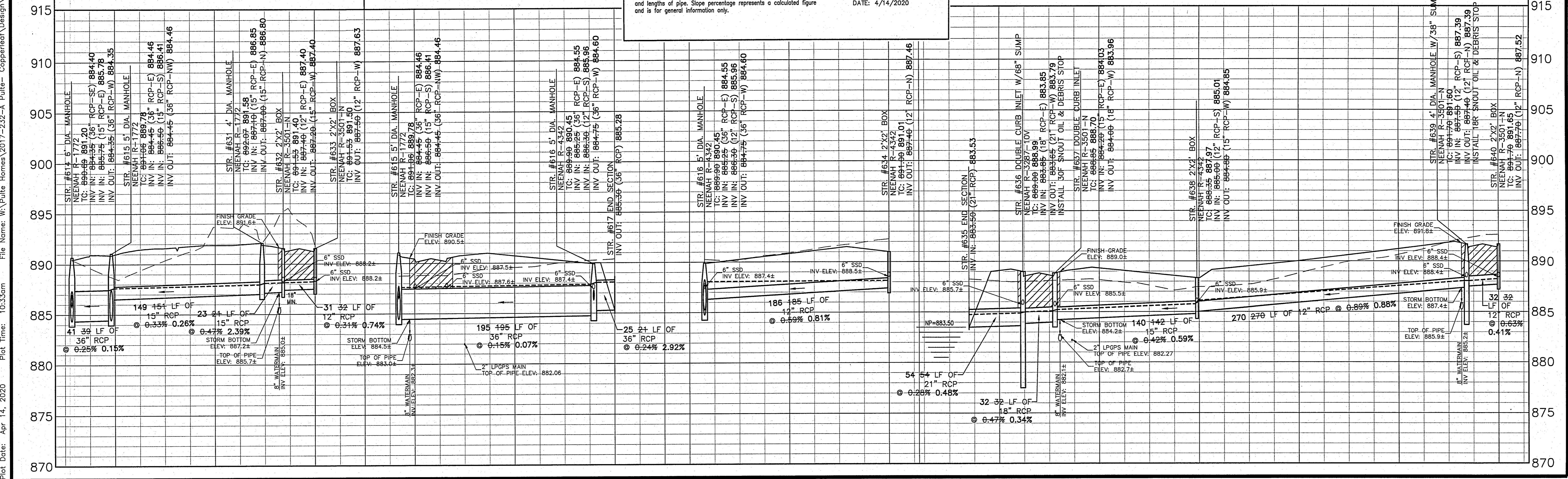


CERTIFICATION FOR "RECORD DRAWING"

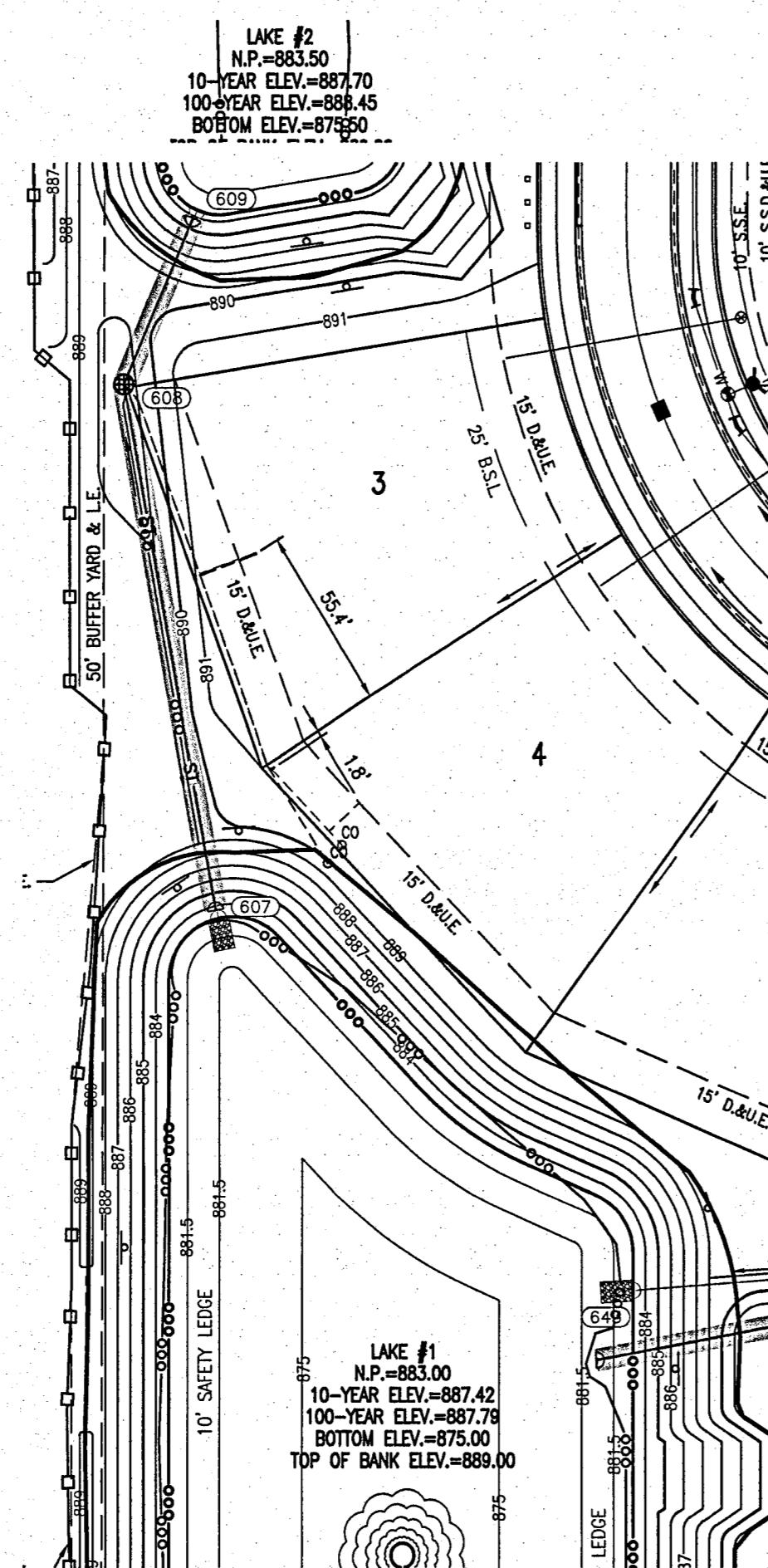
CERTIFIED BY: LUKE A. JAHN

HWC ENGINEERING
135 N. PENNSYLVANIA STREET, SUITE 2800
INDIANAPOLIS, INDIANA 46204
(317) 347-3663 FAX (317) 347-3664NOTE:
Record drawing certification only for top of casting, invert elevations and lengths of pipe. Slope percentage represents a calculated figure and is for general information only.

DATE: 4/14/2020

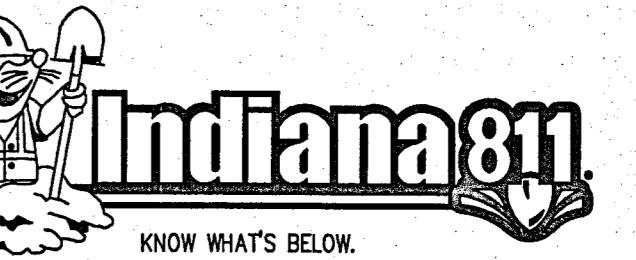


LEGEND:	
EXISTING	PROPOSED
RIGHT-OF-WAY LINE	
EASEMENT LINE	
SETBACK LINE	
CENTERLINE	
SWALE / FLOWLINE	ooo
SUBSURFACE DRAIN	
SANITARY SEWER	s
STORM SEWER	st
STORM CULVERT	w
WATER MAIN	
SANITARY MANHOLE	xxx
STORM MANHOLE	xxx
STORM INLET	xxx
STORM END SECTION	xxx
FIRE HYDRANT	
PROFILED PIPELINE	st
EX - EXISTING	
INV - INVERT ELEVATION	
MH - MANHOLE	
RCP - REINFORCED CONCRETE PIPE	
TC - TOP OF CASTING GRADE	
LPGPS - LOW PRESSURE GRINDER PUMP SYSTEM	



STORM SEWER STRUCTURE DATA TABLE										
STR. #	TC	INV. IN (ELEV.)	INV. OUT (ELEV.)	PIPE IN DIA. (INCH)	PIPE OUT DIA. (INCH)	PIPE IN MATERIAL	PIPE OUT MATERIAL	STR. & CASTING TYPE	DETAIL REFERENCE	SPECIAL NOTES
607	885.88	883.00 (N)		30"		RCP		END SECTION	SEE DETAIL SHEET C8.3	
608	888.50	883.37 (N)	883.37 (S)	30"	30"	RCP	RCP	5' DIA. MANHOLE NEENAH R-4342	SEE DETAIL SHEET C8.6	
609	886.38		883.50 (S)		30"	RCP		END SECTION	SEE DETAIL SHEET C8.3	
643	885.56	883.50 (E)		21"		RCP		END SECTION	SEE DETAIL SHEET C8.3	
644	890.65	885.50 (E)	885.40 (W)	21"	21"	RCP	RCP	4' DIA. MANHOLE NEENAH R-4342	SEE DETAIL SHEET C8.6	
645	891.73	886.25 (E)	886.15 (W)	21"	21"	RCP	RCP	DOUBLE CURB INLET W/68" SUMP NEENAH R-3501-N	SEE DETAIL SHEET C8.3 INSTALL JOH SNOUT, SEE DETAIL SHEET C8.2	
646	891.73	886.50 (E)	886.40 (W)	21"	21"	RCP	RCP	DOUBLE CURB INLET NEENAH R-3501-N	SEE DETAIL SHEET C8.3	
647	891.40	887.80 (E)	887.00 (W)	18"	21"	RCP	RCP	4' DIA. MANHOLE NEENAH R-4342	SEE DETAIL SHEET C8.6	
648	889.79		888.00 (W)		18"	RCP		END SECTION	SEE DETAIL SHEET C8.3	

Pipe Table		
UPSTREAM TO DOWNSTREAM	PIPE LENGTH (FT)	PIPE DIA. (IN)
608-607	164	30"
609-608	58	30"
644-643	181	21"
645-644	143	21"
646-645	32	21"
647-646	166	21"
648-647	18	18"



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GRAPHIC SCALE
(IN FEET)
0' 50' 100' 150'

REVISIONS		
DATE	DESCRIPTION	BY
07/02/16	REVISED PER TAC COMMENTS	DC
08/02/16	REVISED PER TAC COMMENTS	DC
09/12/16	REVISED SUBMISSION NAME & STREET NAME	DC
01/25/18	RECORD DRAWING	SD
01/28/18	REVISED ENTRY SIGN FOOTPRINT	KM
02/27/18	ADDED MOUNDS TO COMMON AREA "A"	KS

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www.hwcengineering.com

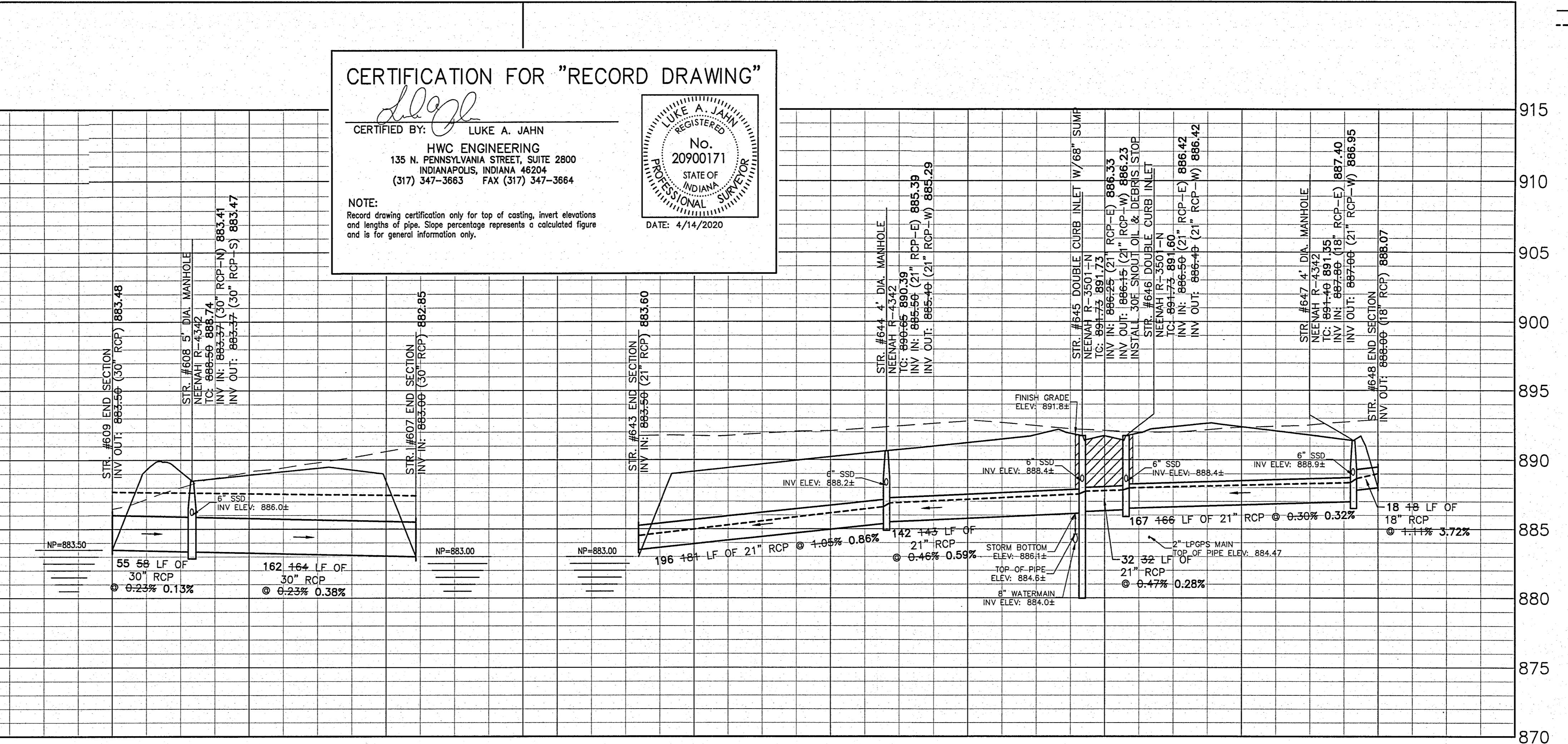
GENERAL NOTES:

- TEMPORARY TRAFFIC CONTROL DURING CONSTRUCTION TO CONFORM TO APPLICABLE LOCAL AND STATE STANDARDS.
- ALL CONSTRUCTION ACTIVITY ON THIS SITE TO BE PERFORMED IN COMPLIANCE WITH APPLICABLE O.S.H.A. STANDARDS FOR WORKER SAFETY.
- IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO FIELD VERIFY ALL UTILITY LOCATIONS BEFORE CONSTRUCTION BEGINS.
- IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO FIELD VERIFY ALL EXISTING ELEVATIONS BEFORE CONSTRUCTION BEGINS.
- THE STORM SEWER SYSTEM SHALL BE CONSTRUCTED PER DESIGN SPECIFIED AND AS APPROVED BY THE CITY OF CARMEL. THE FINAL APPROVED CONSTRUCTION PLANS, deviations from the approved design shall only be permitted due to special circumstances or difficulty during construction and will require prior field approval from a designated representative of the City of Carmel in addition to supplemental approval by the design engineer. An explanation of any such deviation shall be included as a requirement as-built/record drawings submitted for release of performance guarantees. Approved design slopes identified generating velocities of 2.5 fps or less or 10 fps or greater (at full flow capacity) shall require as-built certification at the time of construction, prior to backfilling the pipe. The contractor is instructed to as-build each section of storm pipe as it is being installed to ensure compliance with the design plans and as approved by the City of Carmel.
- NO EARTH DISTURBING ACTIVITY MAY COMMENCE WITHOUT AN APPROVED STORM WATER MANAGEMENT PERMIT.
- ALL STORMWATER DRAINAGE CASTINGS SHALL BE LABELED WITH ENVIRONMENTAL MESSAGING "DUMP NO WASTE".
- ALL CONCRETE PIPE JOINTS SHALL BE CONTINUOUS O-RING RUBBER GASKET CONFORMING TO ASTM C 443
- 18° OF VERTICAL SEPARATION MUST BE MAINTAINED FOR ALL UTILITY CROSSINGS.
- FOR STORM SEWER BACKFILL SPECIFICATIONS, REFER TO STORM SEWER TRENCH DETAIL STANDARD DRAWING 10-28 ON SHEET C8.4

STORM PROFILE

VERTICAL SCALE: 1" = 5'

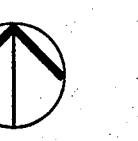
HORIZONTAL SCALE: 1" = 50'



LEGEND:	
EXISTING	PROPOSED
RIGHT-OF-WAY LINE	
EASEMENT LINE	
SETBACK LINE	
CENTERLINE	
SWALE / FLOWLINE	
SUBSURFACE DRAIN	
SANITARY SEWER	S
STORM SEWER	ST
STORM CULVERT	ST
WATER MAIN	W
SANITARY MANHOLE	xxx
STORM MANHOLE	xxx
STORM INLET	xxx
STORM END SECTION	xxx
FIRE HYDRANT	
PROFILED PIPELINE	ST
EX - EXISTING	
INV - INVERT ELEVATION	
MH - MANHOLE	
RCP - REINFORCED CONCRETE PIPE	
TC - TOP OF CASTING GRADE	
LPGPS - LOW PRESSURE GRINDER PUMP SYSTEM	

STORM SEWER STRUCTURE DATA TABLE										
STR. #	TC	INV. IN (ELEV.)	INV. OUT (ELEV.)	PIPE IN DIA. (INCH)	PIPE OUT DIA. (INCH)	PIPE IN MATERIAL	PIPE OUT MATERIAL	STR. & CASTING TYPE	DETAIL REFERENCE	SPECIAL NOTES
601	881.33	879.00 (N)		24"	24"	RCP		END SECTION	SEE DETAIL SHEET C8.3	
602	883.95	879.20 (E)	879.10 (S)	24"	24"	RCP	RCP	5' DIA. MANHOLE NEEENAH R-1772	SEE DETAIL SHEET C8.6	
603	888.22	881.20 (N)	881.10 (W)	24"	24"	RCP	RCP	5' DIA. MANHOLE NEEENAH R-1772	SEE DETAIL SHEET C8.6	
604	886.65	881.85 (NE)	881.75 (S)	24"	24"	RCP	RCP	5' DIA. MANHOLE NEEENAH R-1772	SEE DETAIL SHEET C8.6	
605	887.20		882.50 (SW)		24"		RCP	POND OUTLET CONTROL STRUCTURE	SEE DETAIL SHEET C8.2	

Pipe Table		
UPSTREAM TO DOWNSTREAM	PIPE LENGTH (FT)	PIPE DIA. (IN)
602-601	19	24"
603-602	344	24"
604-603	93	24"
605-604	113	24"



GRAPHIC SCALE

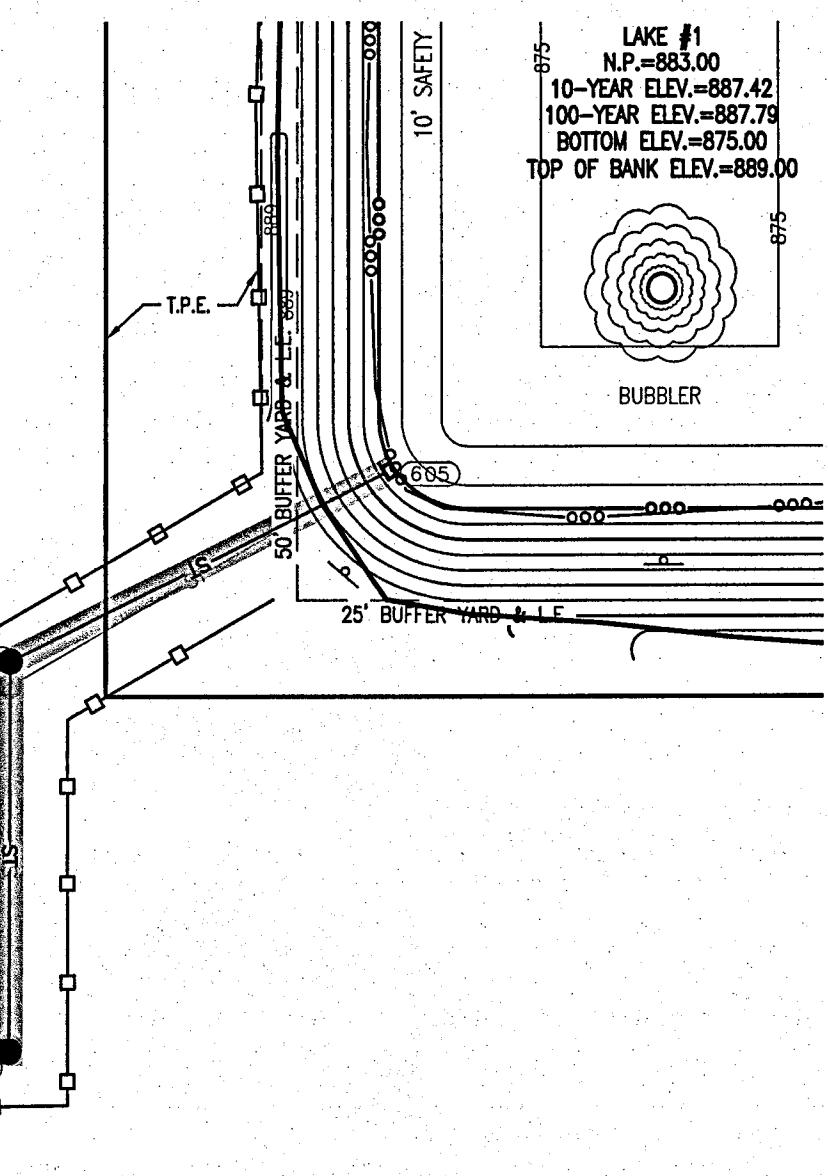
0' 50' 100' 150'

(IN FEET)

REVISIONS		
DATE	DESCRIPTION	BY
06/14/18	REVISED PER TAC COMMENTS	K5/BB
07/02/18	REVISED PER TAC COMMENTS	DC
08/02/18	REVISED SUBMISSION COMMENTS	DC
09/12/18	NAME & STREET NAME	DC
01/25/19	RECORD DRAWING	SD
01/28/19	REVISED ENTRY SIGN FOOTPRINT	KM
02/27/19	ADDED MOUNDS TO COMMON AREA A*	KS

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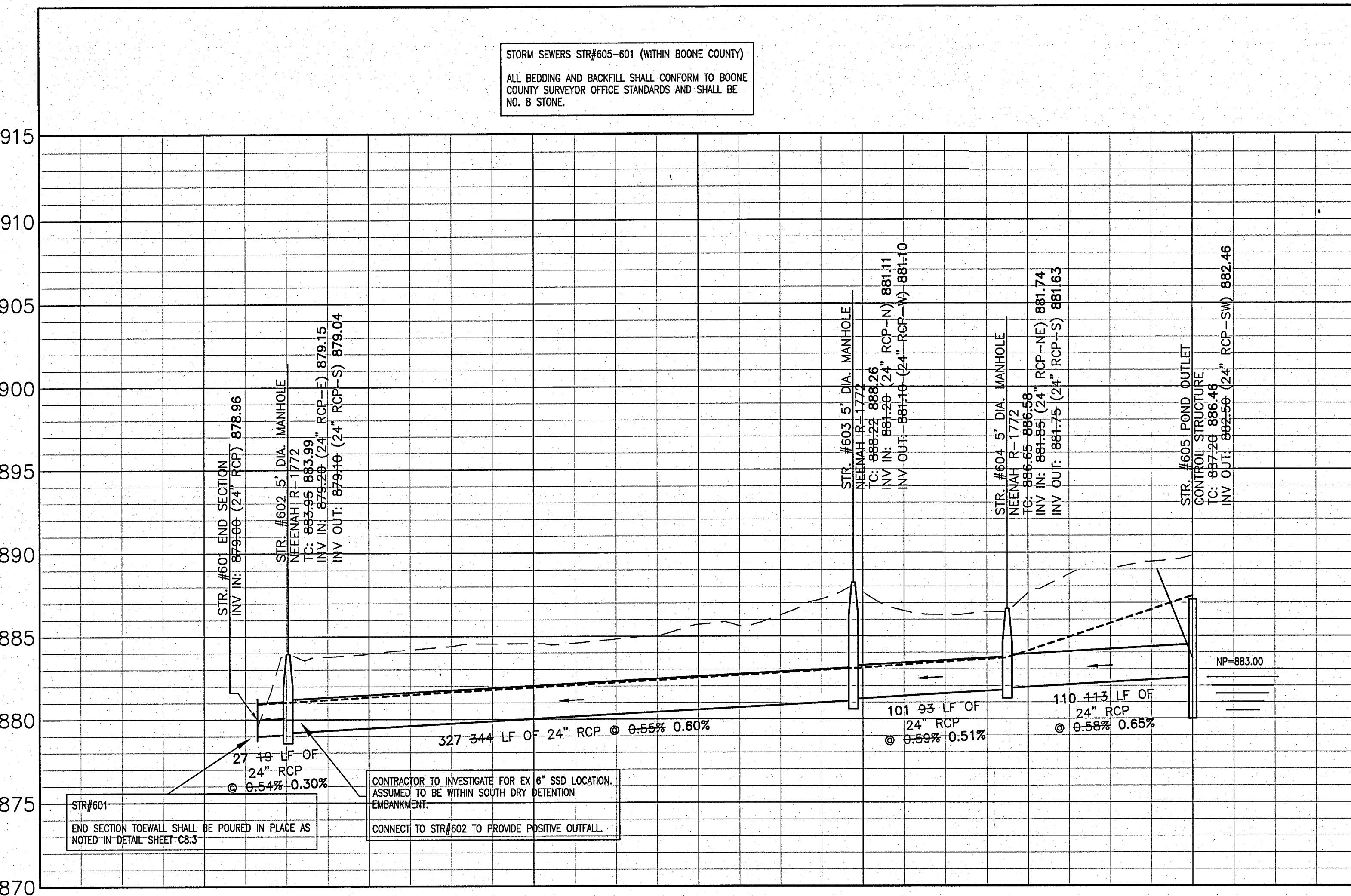


By: sdonaldson

- As-built.dwg, Loyer: C6.3
Vertical Scale: 1" = 5'
Horizontal Scale: 1" = 50'
GENERAL NOTES:
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 - IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO FIELD VERIFY ALL EXISTING ELEVATIONS BEFORE CONSTRUCTION BEGINS.
 - THE STORM SEWER SYSTEM SHALL BE CONSTRUCTED PER DESIGN SPECIFIED AND AS APPROVED BY THE CITY OF CARMEL. ON THE FINAL APPROVED CONSTRUCTION PLANS, DEVIATIONS FROM THE APPROVED DESIGN SHALL ONLY BE PERMITTED DUE TO SPECIFIC CIRCUMSTANCES OR CONDITIONS NOT PREDICTED AND UNFORESEEN PRIOR TO APPROVAL. THESE DESIGN CHANGES MUST BE APPROVED BY THE CITY OF CARMEL IN ADDITION TO SUPPLEMENTAL APPROVAL BY THE DESIGN ENGINEER. AN EXPLANATION OF ANY SUCH DEVIATION SHALL BE INCLUDED AS A REQUIREMENT ON AS-BUILT/RECORD DRAWINGS SUBMITTED FOR RELEASE OF PERFORMANCE GUARANTEES.
 - APPROVED DESIGN SLOPES IDENTIFIED AS GENERATING VELOCITIES OF 2.5 FPS OR LESS OR 10 FPS OR GREATER (AT FULL FLOW CAPACITY) SHALL REQUIRE AS-BUILT CERTIFICATION AT THE TIME OF CONSTRUCTION, PRIOR TO BACKFILLING THE PIPE. THE CONTRACTOR IS INSTRUCTED TO AS-BUILT EACH SECTION OF STORM PIPE AS IT IS BEING INSTALLED TO ENSURE COMPLIANCE WITH THE DESIGN PLANS AND AS APPROVED BY THE CITY OF CARMEL.
 - NO EARTH DISTURBING ACTIVITY MAY COMMENCE WITHOUT AN APPROVED STORM WATER MANAGEMENT PERMIT.
 - ALL STORMWATER DRAINAGE CASTINGS SHALL BE LABELED WITH ENVIRONMENTAL MESSAGING "DUMP NO WASTE".
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STORM PROFILE

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'



CERTIFICATION FOR "RECORD DRAWING"

Luke A. Jahn

CERTIFIED BY: LUKE A. JAHN
HWC ENGINEERING
135 N. PENNSYLVANIA STREET, SUITE 2800
INDIANAPOLIS, INDIANA 46204
(317) 347-3664

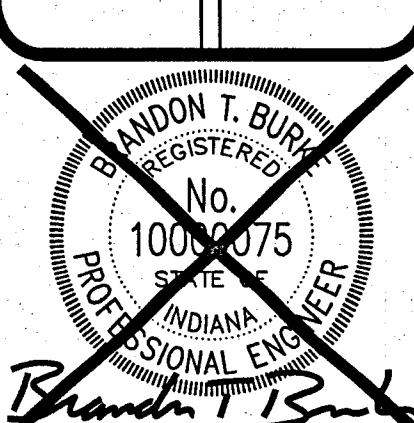
NOTE:
Record drawing certification only for top of casting, invert elevations and lengths of pipe. Slope percentage represents a calculated figure and is for general information only.

LUKE A. JAHN
REGISTERED
No. 20900171
STATE OF
INDIANA
PROFESSIONAL
SURVEYOR
DATE: 4/14/2020

COPPER RUN CARMEL, INDIANA

C6.3

STORM SEWER PLAN AND PROFILE



DRAWN BY
DC
CHECKED BY
BB
DATE
MAY 18, 2018
SCALE
AS SHOWN
JOB NUMBER
2017-232-A
SHEET